

## Patent Abstracts of Japan

PUBLICATION NUMBER : 54083374  
PUBLICATION DATE : 03-07-79

APPLICATION DATE : 16-12-77  
APPLICATION NUMBER : 52150494

APPLICANT : HITACHI LTD;

INVENTOR : MATSUBAYASHI YOSHINOBU;

INT.CL. : H01L 21/60

TITLE : CHIP BONDING PROCESS

ABSTRACT : PURPOSE: To use melting bond by removing the oxide film on the surface of solder instead of using flux.

CONSTITUTION: Substrate 4 and chip 1 are heated to a temperature below the melting point of solder by means of fitted heaters 10 and 9 respectively. In this state, solder pieces 2 and 5 are lowered just before they touch one another, and later rod 8 is given ultrasonic vibration and micro-descent. Oxide film on the surface of the portion at which both the solder pieces 2 and 5 come into contact is peeled off, and by friction heat due to ultrasonic vibration, solder pieces 2 and 5 are partially melted and bonded together. When the entire part comes into a state of partial melting, solder pieces are heated up to above the melting point, and solder pieces 2 and 5 of the chip and substrate sufficiently re-flow and are bonded by melting. In this way, flux is unnecessary and operation efficiency is increased.

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PUBLICATION NUMBER : 07263849  
PUBLICATION DATE : 13-10-95

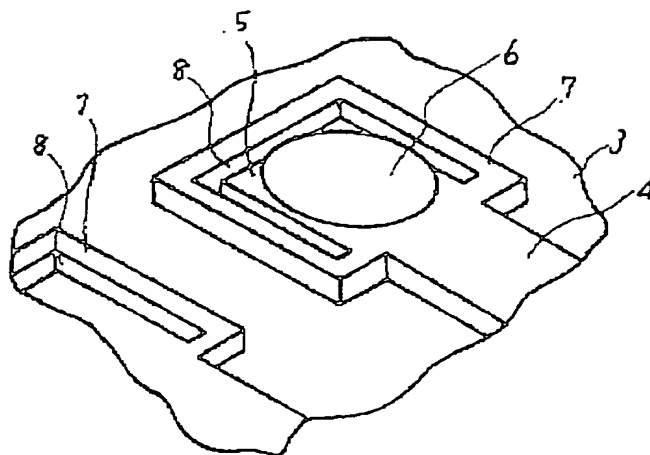
APPLICATION DATE : 24-03-94  
APPLICATION NUMBER : 06053617

APPLICANT : MITSUBISHI ELECTRIC CORP;

INVENTOR : TANIGAWA YUSUKE;

INT.CL. : H05K 3/34 H05K 3/34

TITLE : PRINTED CIRCUIT BOARD



ABSTRACT : PURPOSE: To obtain a printed circuit board having a joining part of a wiring which makes possible the prevention of short circuit of adjacent wirings and lead pins and reliable soldering.

CONSTITUTION: A wiring 4 is formed on a board 3 and a joining part 5 to which a lead pin of a semiconductor device is to be joined is provided in this wiring 4, while a dam 7 is provided so that it surrounds three sides of the periphery of the joining part 5. According to this constitution, solder 6 left over in the joining part 5 flows into between the joining part 5 and the dam 7, being prevented from overflowing the dam 7.

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